Fig 1.

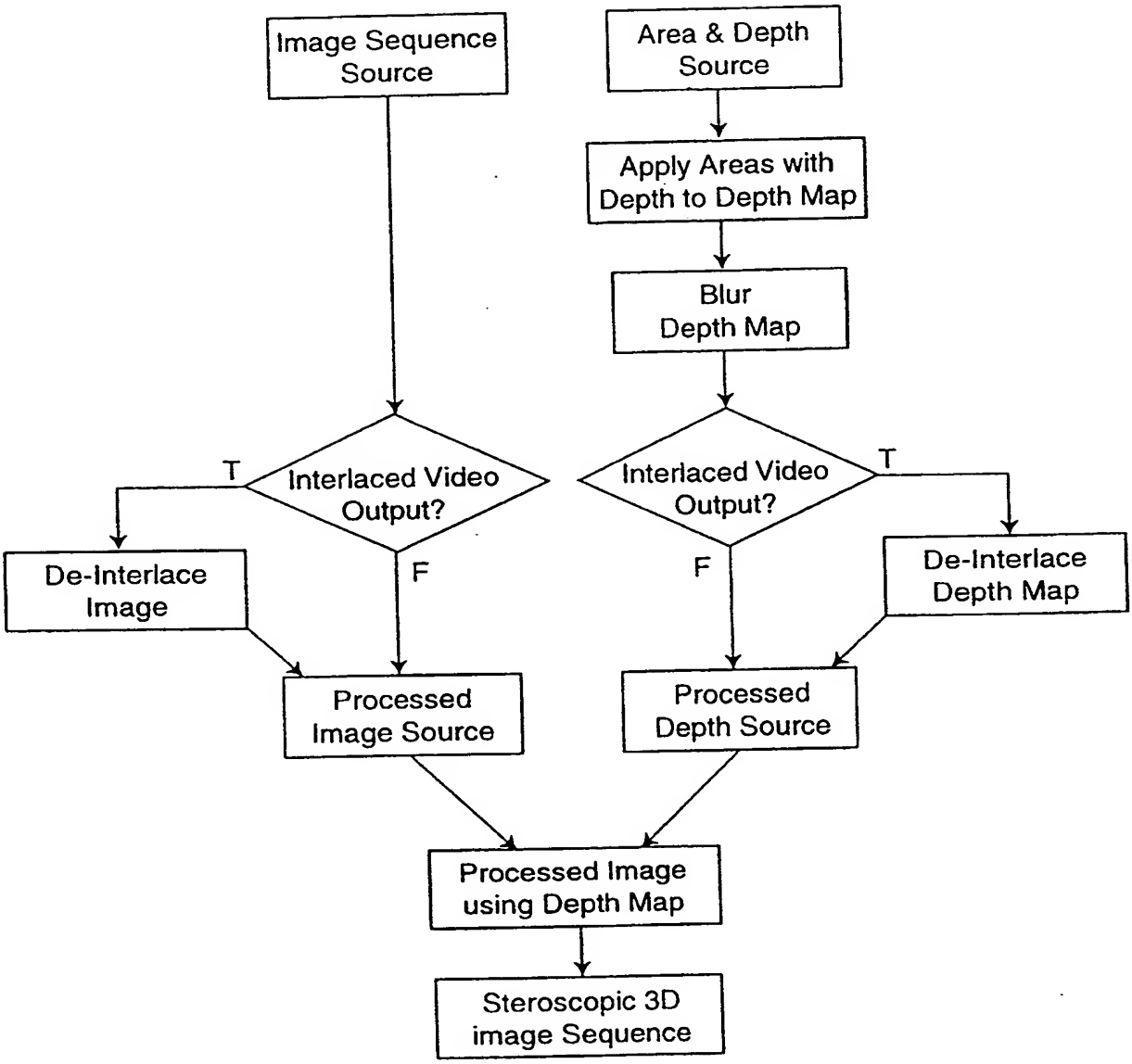


Image Sequence Source
Area & Depth Source
Apply Areas with Depth to Depth Map
Blur Depth Map
Interlaced Video Output?
T
F
De-Interlace Image
Processed Image Source
Interlaced Video Output?
T
F
De-Interlace Depth Map
Processed Depth Source
Processed Image using Depth Map
Steroscopic 3D image Sequence

Fig 2a.

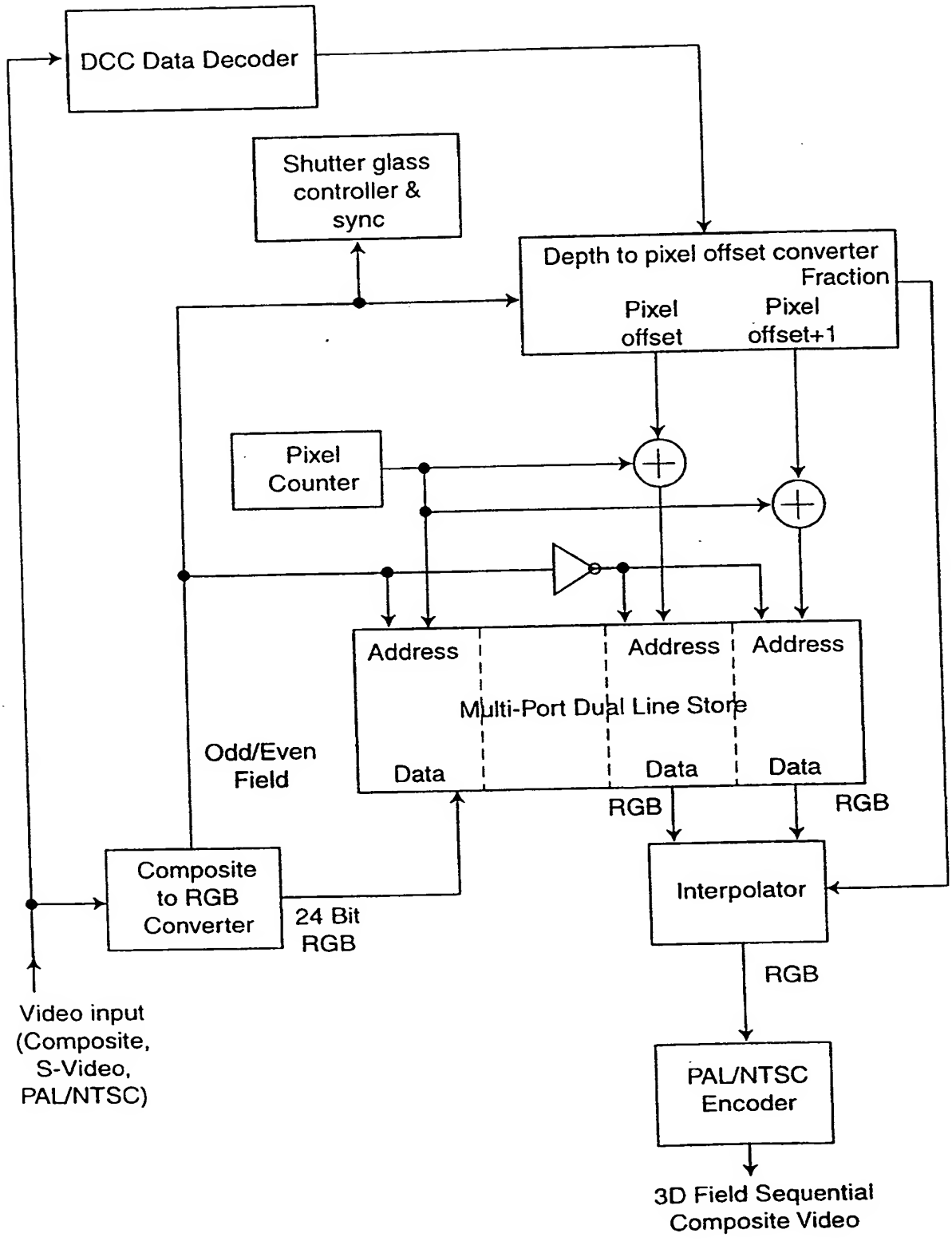

DCC Data Decoder
Shutter glass controller & sync
Depth to pixel offset converter
Fraction
Pixel offset
Pixel offset+1
Pixel Counter
Address
Address
Address
Multi-Port Dual Line Store
Data
Data
Data
Odd/Even Field
RGB
RGB
Composite to RGB Converter
24 Bit RGB
Interpolator
RGB
Video input (Composite, S-Video, PAL/NTSC)
PAL/NTSC Encoder
3D Field Sequential Composite Video

Fig 2b.

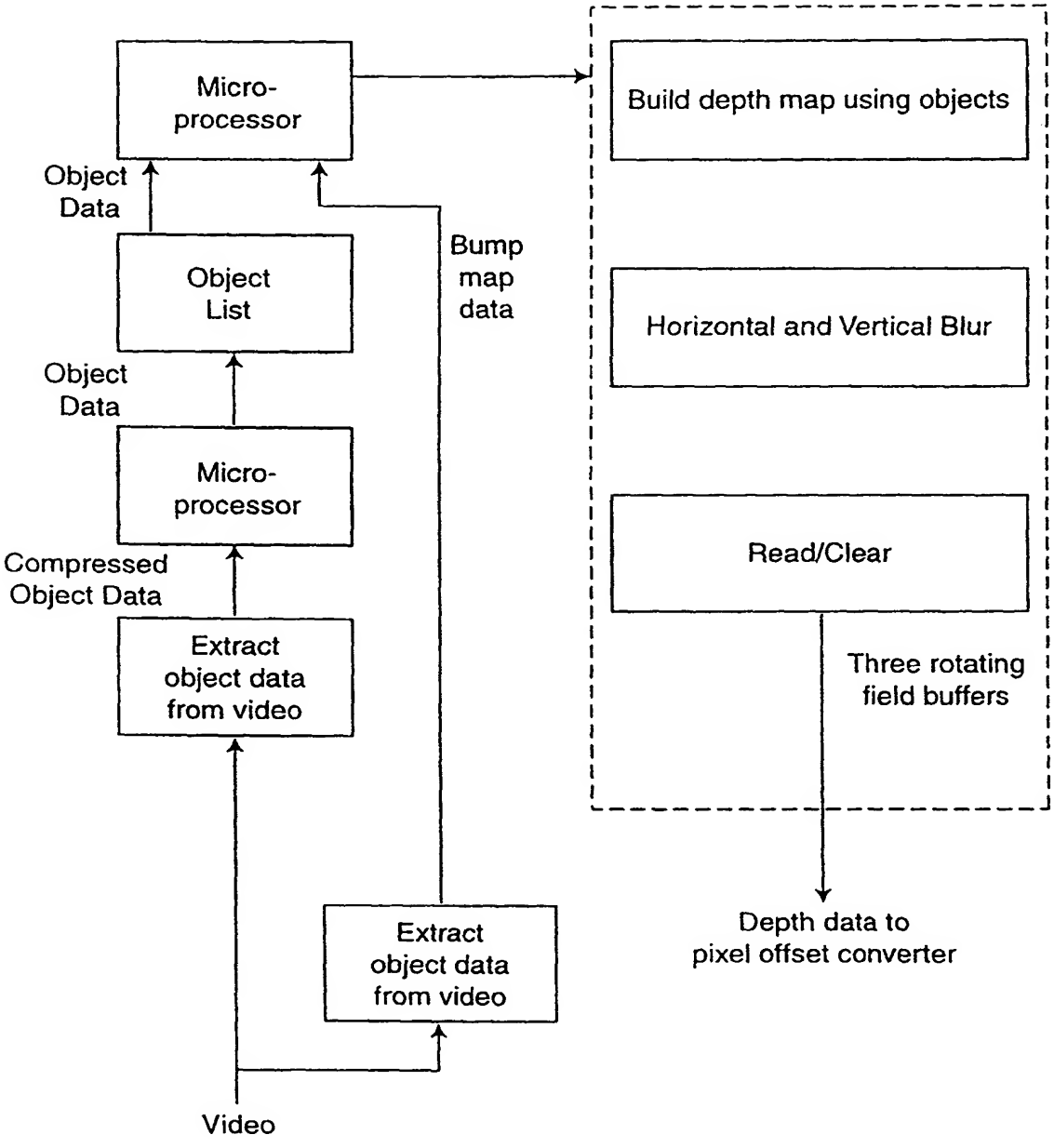

Micro-processor
Object Data
Object List
Object Data
Micro-processor
Compressed Object Data
Extract object data from video
Video
Bump map data
Extract object data from video
Build depth map using objects
Horizontal and Vertical Blur
Read/Clear
Three rotating field buffers
Depth data to pixel offset converter

Fig 2c.

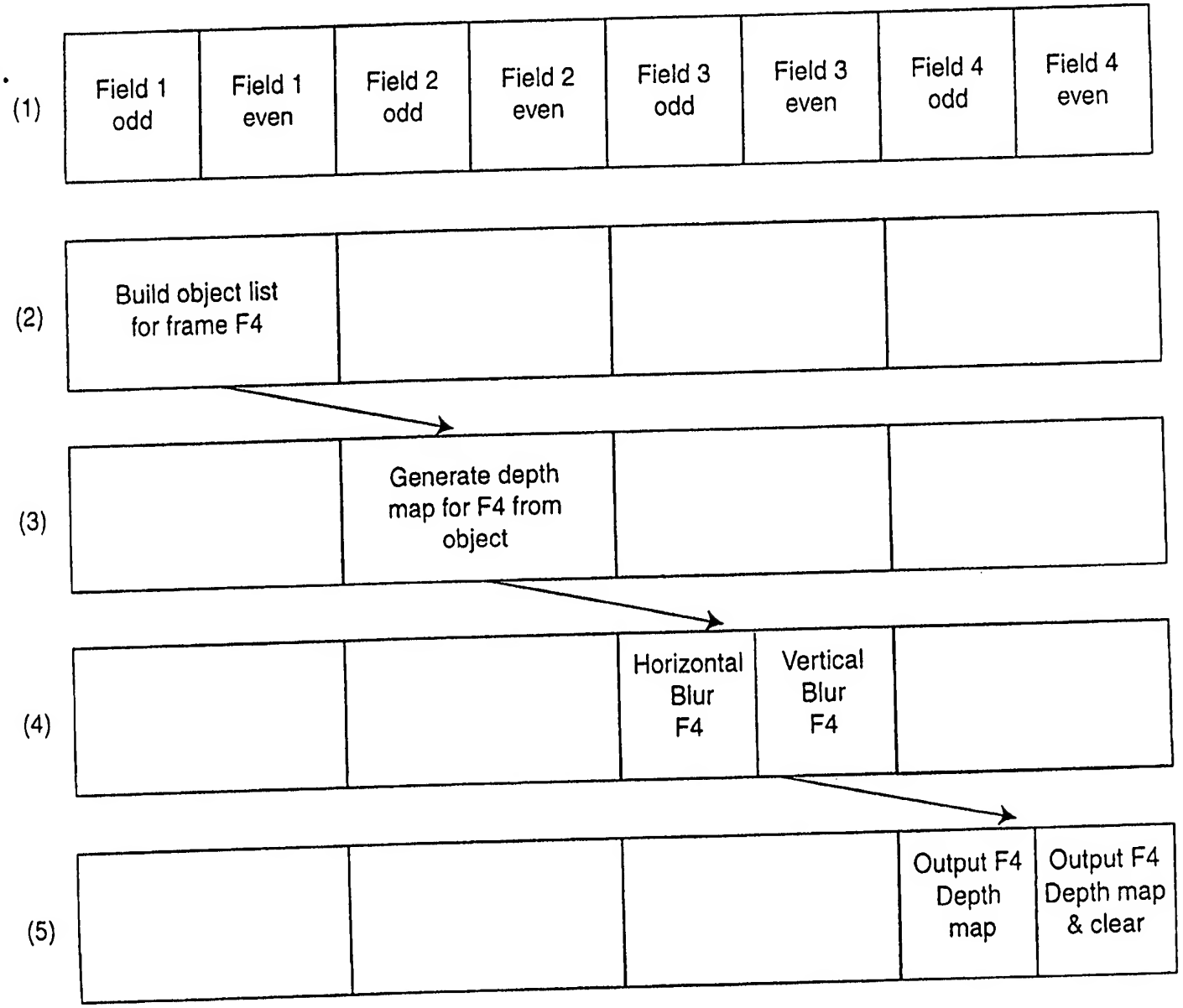
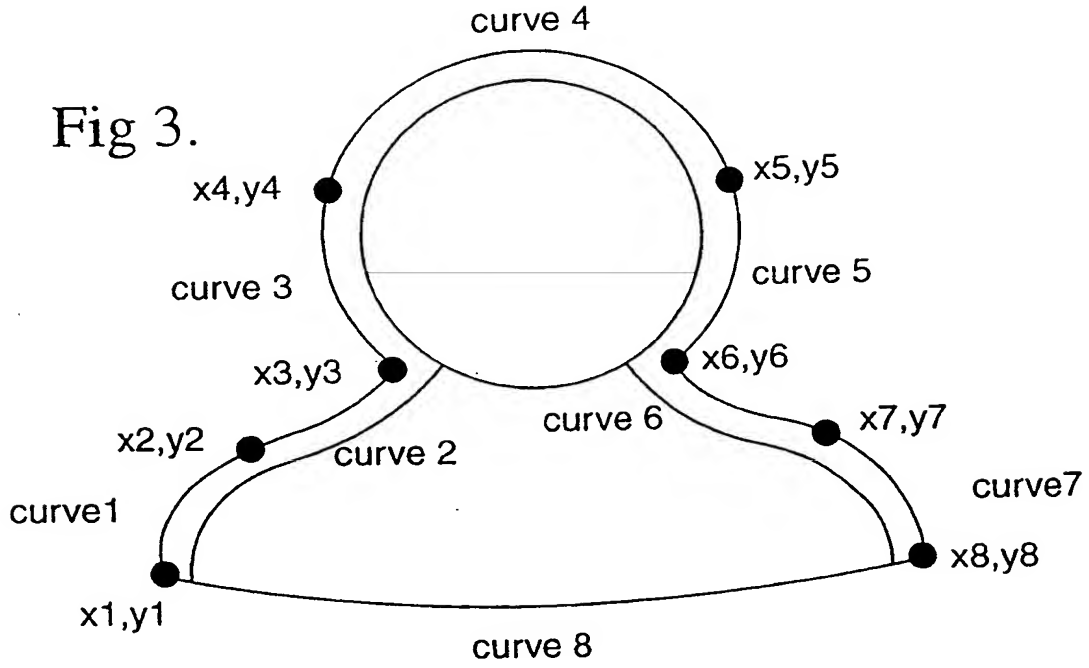
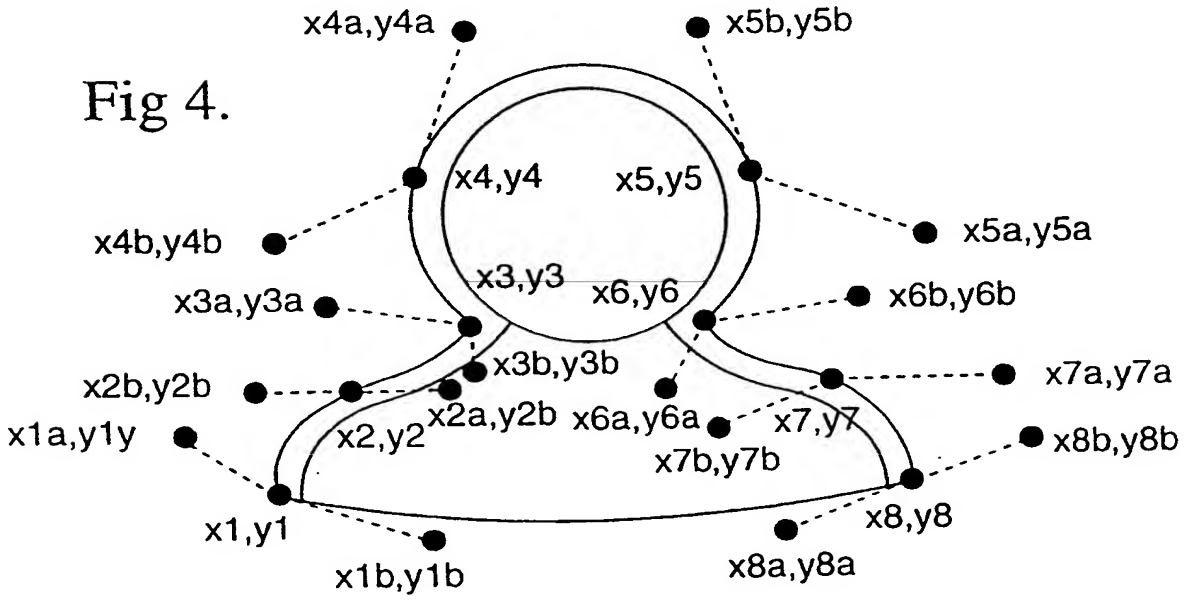

(1)
Field 1 odd
Field 1 even
Field 2 odd
Field 2 even
Field 3 odd
Field 3 even
Field 4 odd
Field 4 even
(2)
Build object list for frame F4
(3)
Generate depth map for F4 from object
(4)
Horizontal Blur F4
Vertical Blur F4
(5)
Output F4 Depth map
Output F4 Depth map & clear

Fig 3.



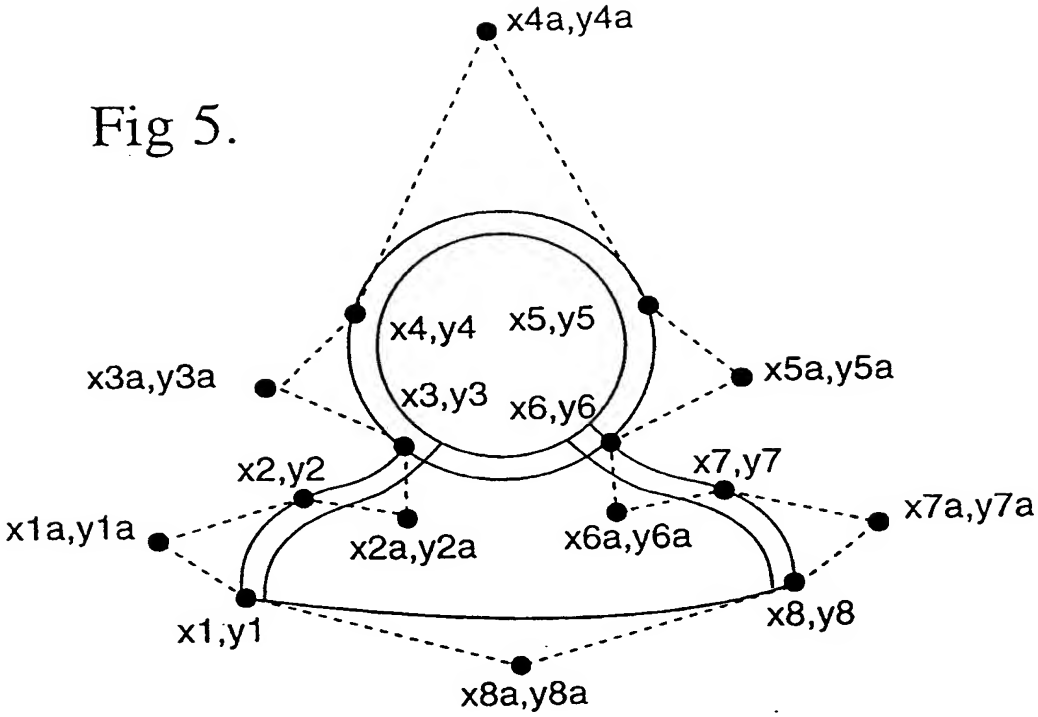
Object Number 1, Depth 20

Fig 4.



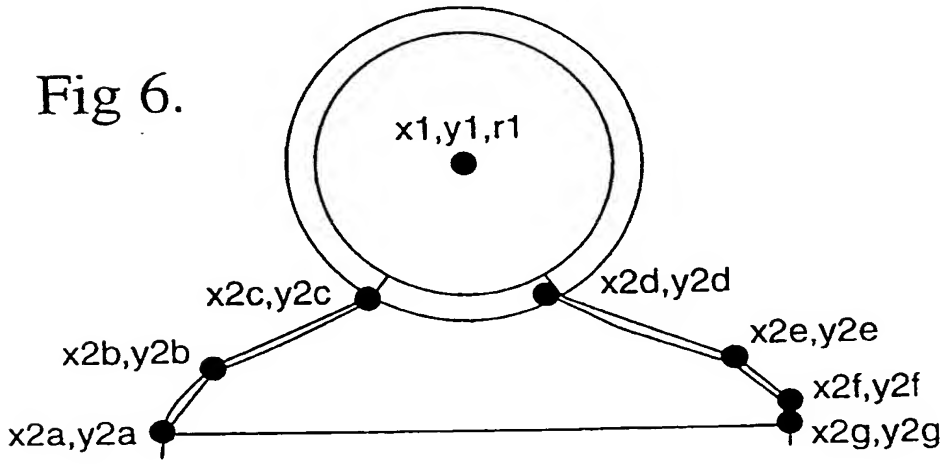
Object Number 1, Depth 20

Fig 5.



Object Number 1, Depth 20

Fig 6.



Object Number 1, Depth 20

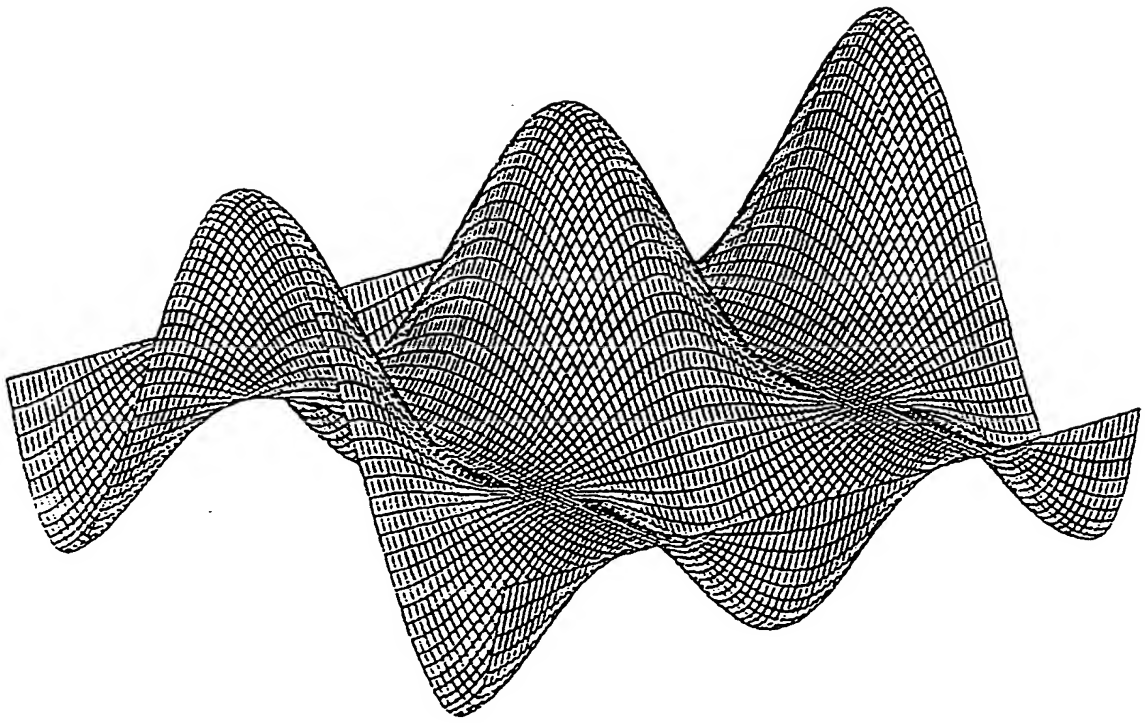


Fig 7.

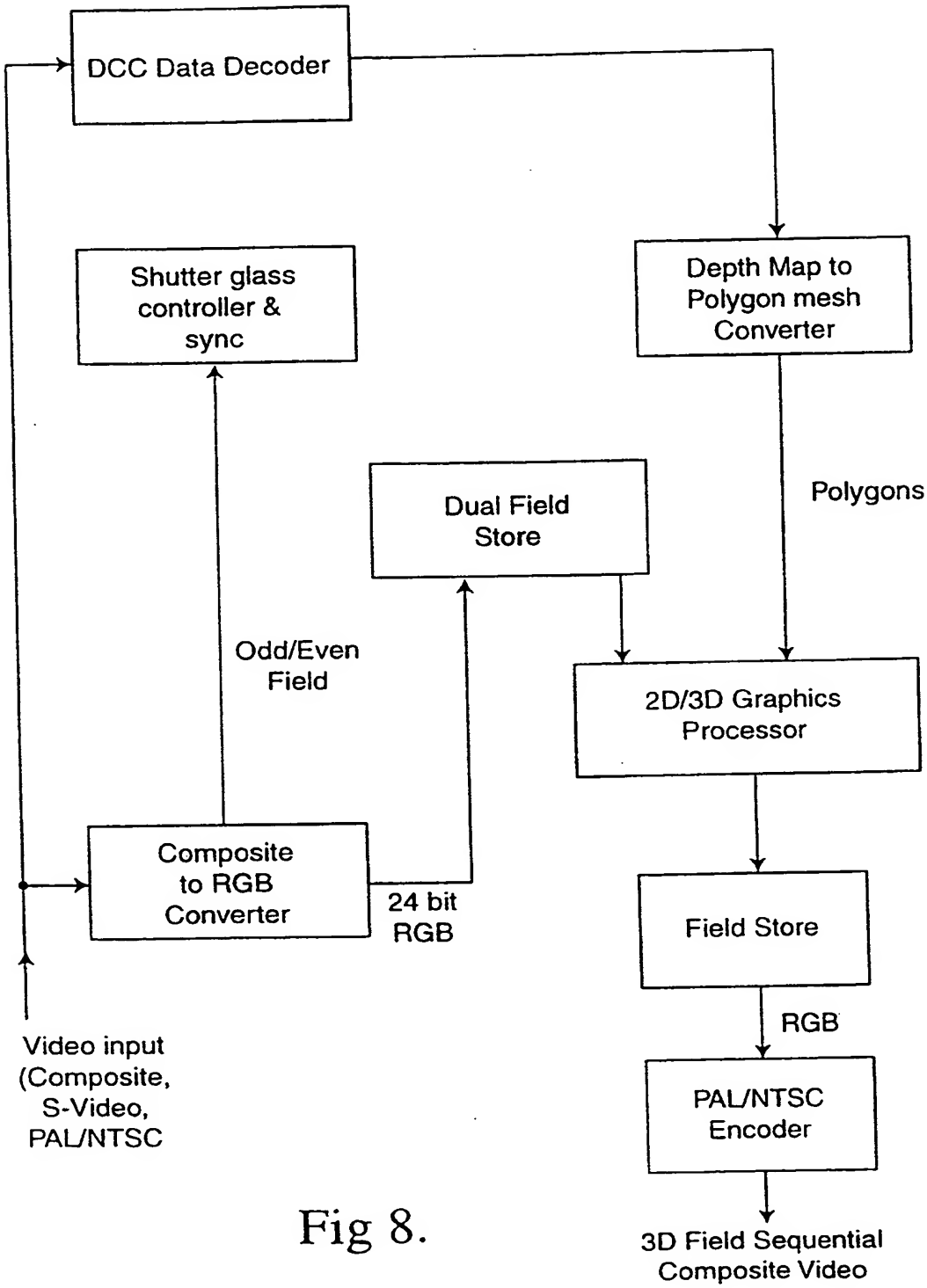

DCC Data Decoder
Shutter glass controller & sync
Depth Map to Polygon mesh Converter
Dual Field Store
Polygons
Odd/Even Field
2D/3D Graphics Processor
Composite to RGB Converter
24 bit RGB
Field Store
RGB
PAL/NTSC Encoder
Video input (Composite, S-Video, PAL/NTSC
3D Field Sequential Composite Video

Fig 8.

Fig 9.

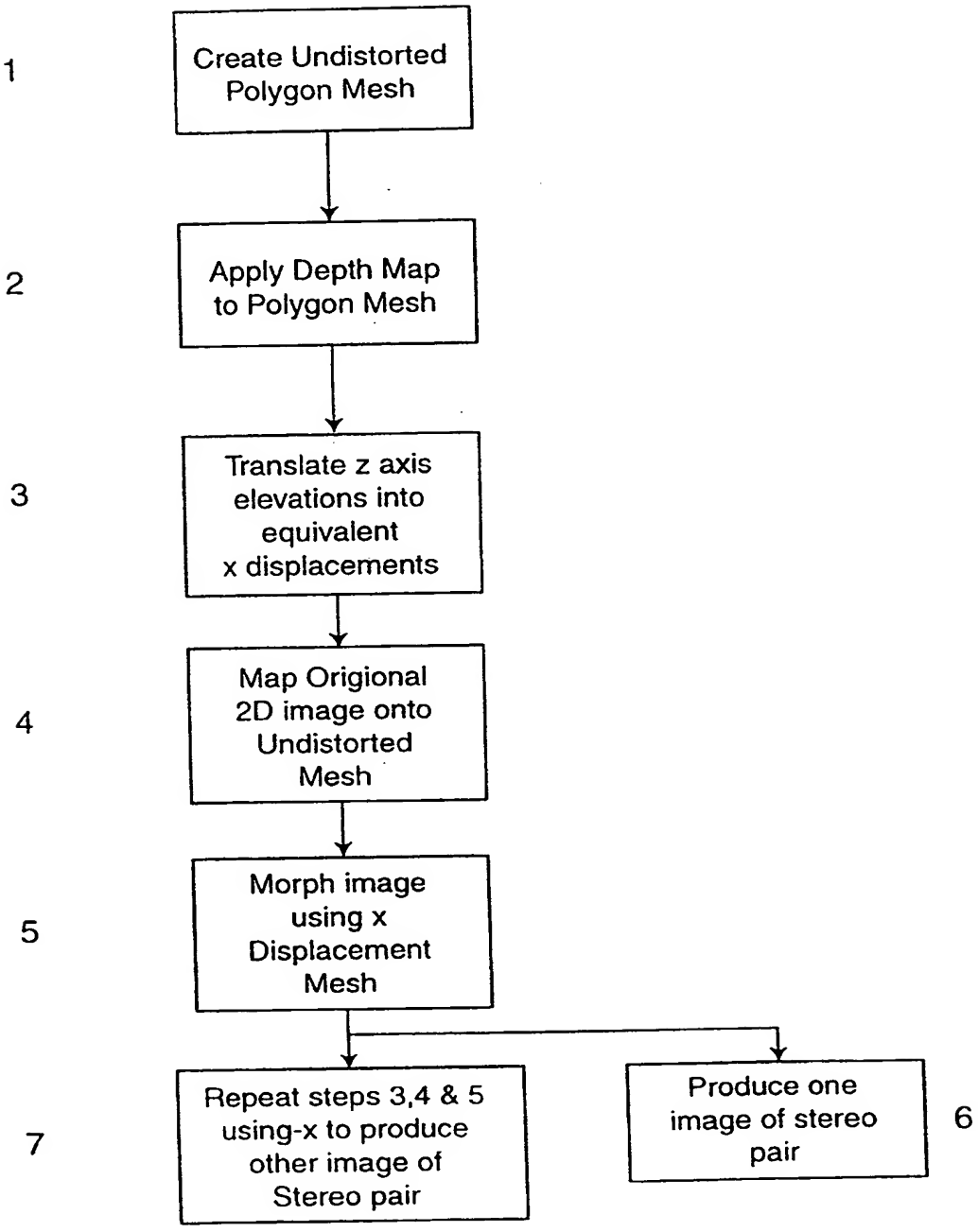

1
Create Undistorted Polygon Mesh
2
Apply Depth Map to Polygon Mesh
3
Translate z axis elevations into equivalent x displacements
4
Map Origional 2D image onto Undistorted Mesh
5
Morph image using x Displacement Mesh
6
Produce one image of stereo pair
7
Repeat steps 3,4 & 5 using-x to produce other image of Stereo pair

Fig 10.

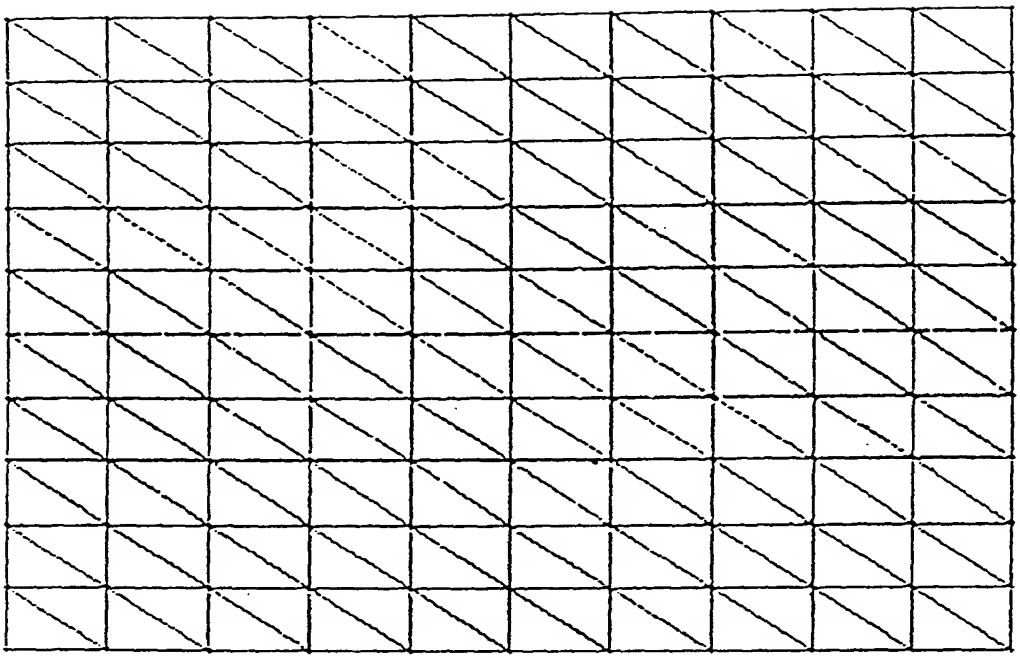


Fig 11.

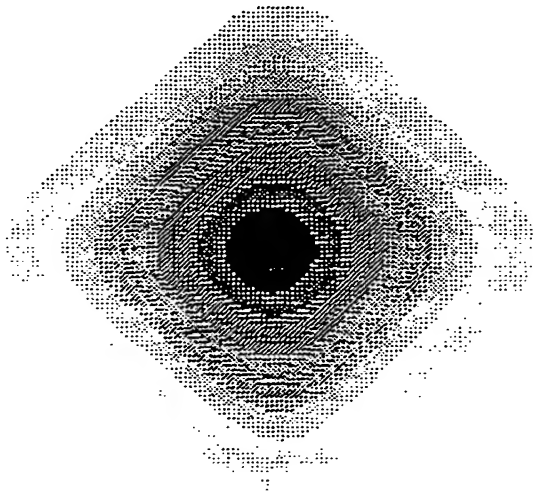


Fig 12.

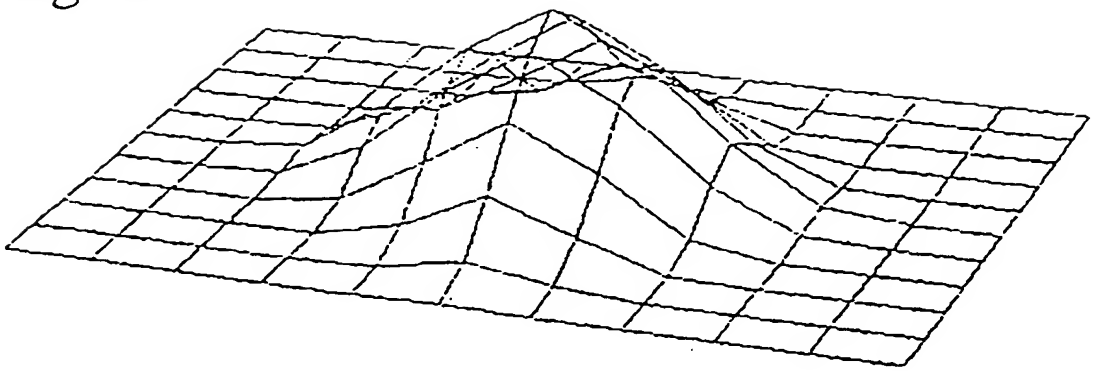


Fig 13.

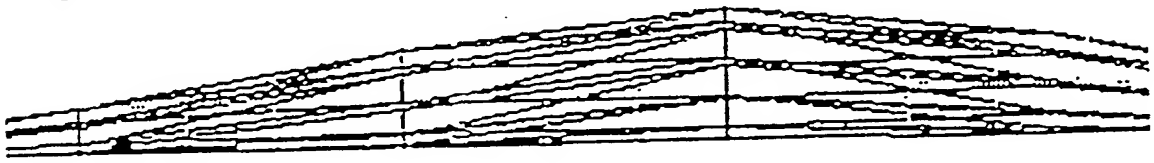


Fig 14.

Fig 15.

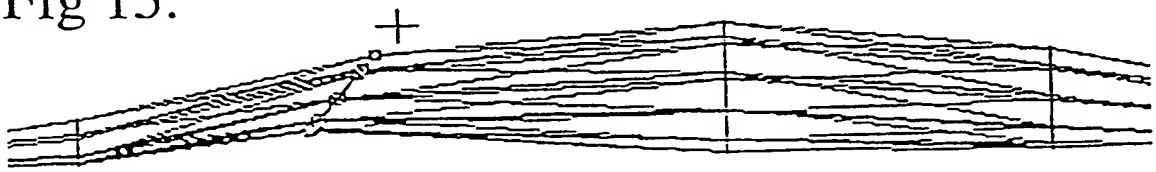


Fig 16.

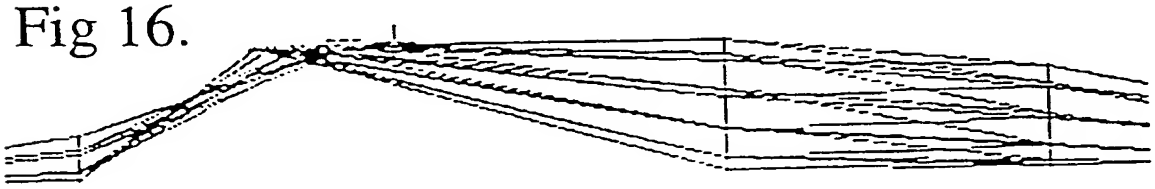
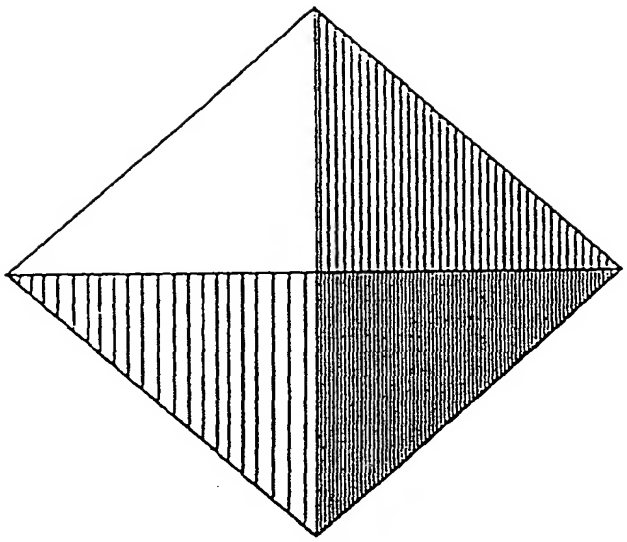


Fig 17.



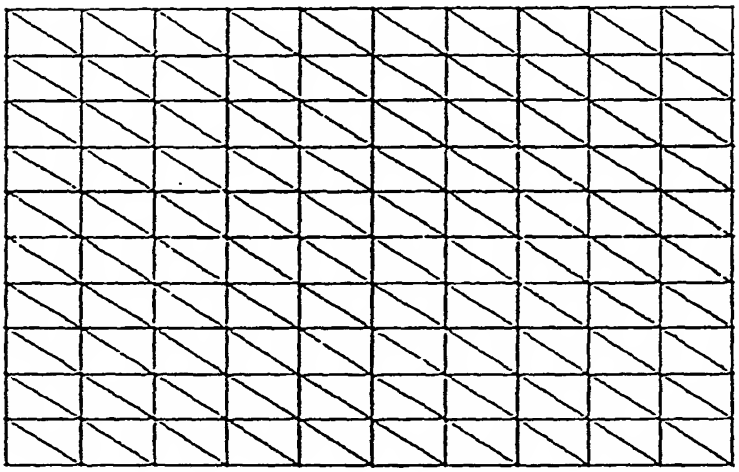


Fig 18.

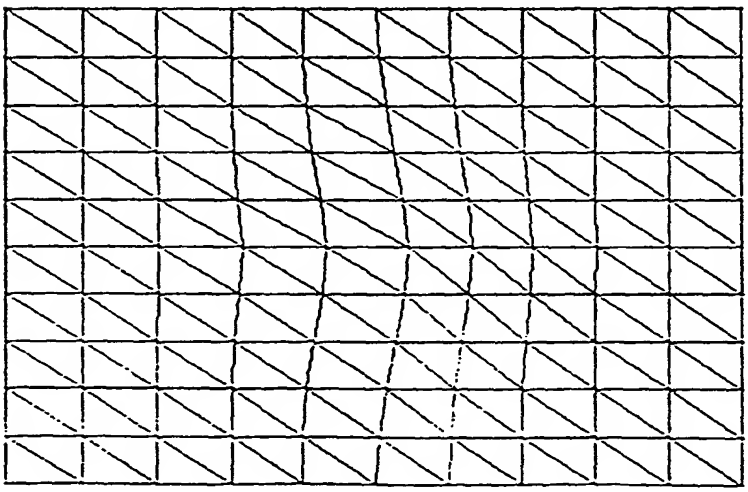


Fig 19.

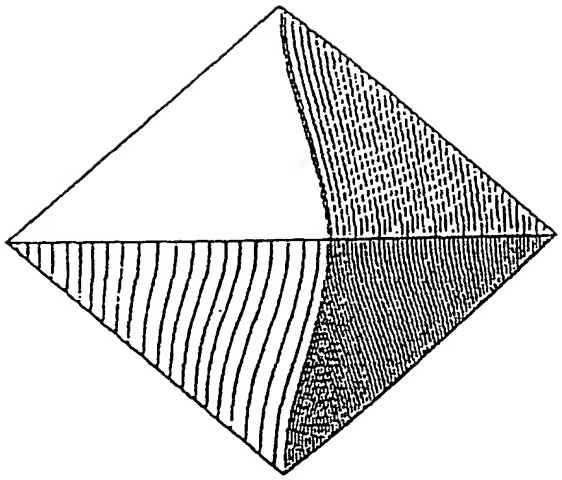
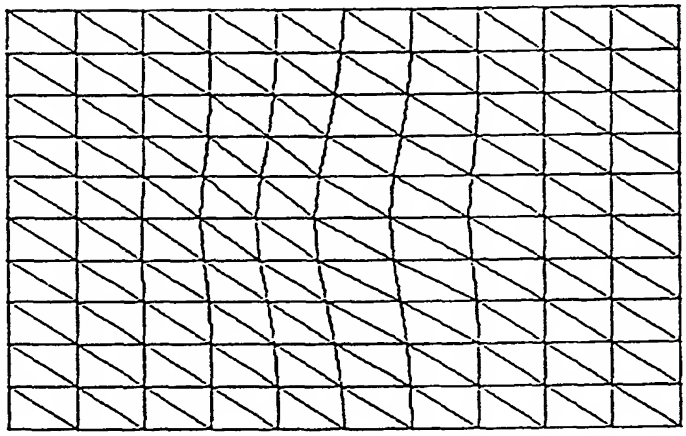


Fig 20.



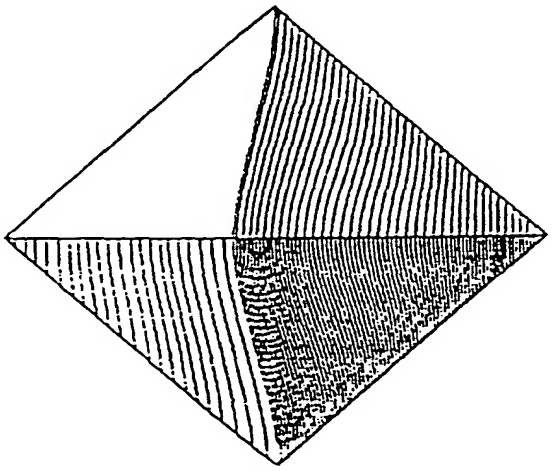
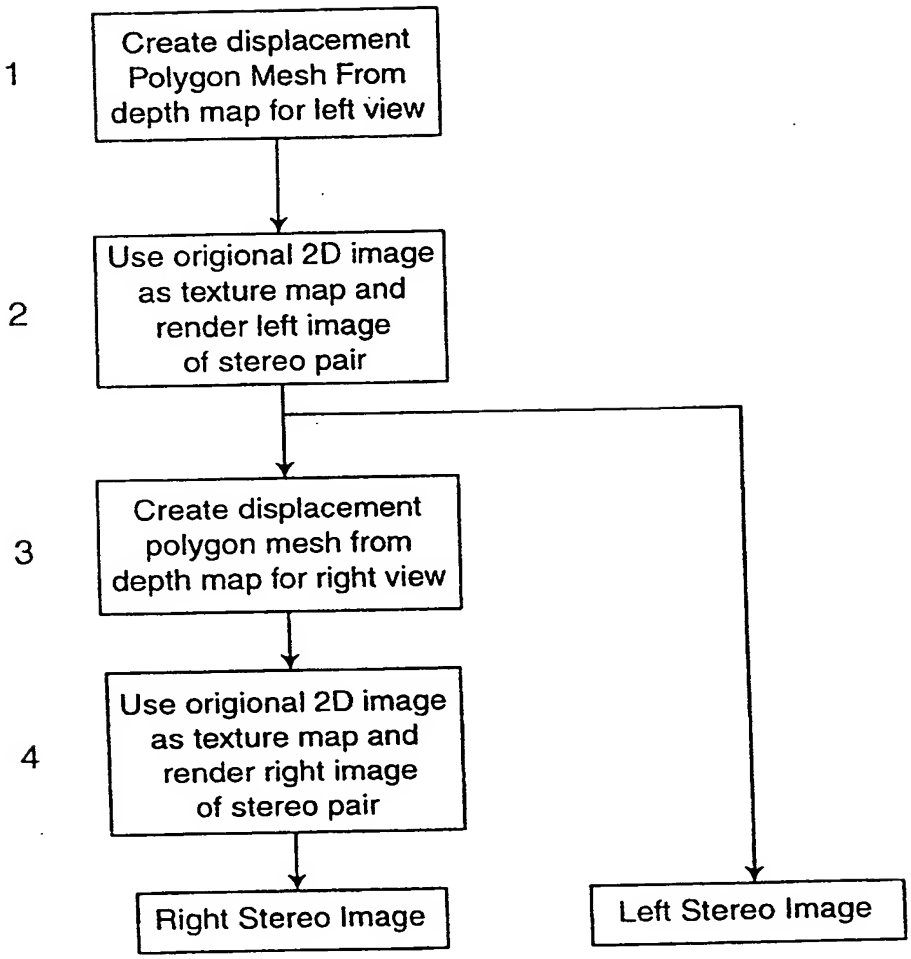


Fig 21.


1
Create displacement Polygon Mesh From depth map for left view
2
Use origional 2D image as texture map and render left image of stereo pair
3
Create displacement polygon mesh from depth map for right view
4
Use origional 2D image as texture map and render right image of stereo pair
Right Stereo Image
Left Stereo Image